

What is claimed is:

1. A method comprising:
transmitting a data stream of data packets having a known arrangement from a stream sender to a stream receiver via a network connection;
analyzing the transmitted data packets received at the stream receiver to determine whether any missing known data packets in the known data packet arrangement were not transmitted by the network connection to the stream receiver;
requesting the stream sender to retransmit any missing known data packets not received at the stream receiver; and
retransmitting any missing known data packets from the stream sender to the stream receiver.
2. The method of claim 1, wherein the analyzing procedure is performed by comparing the data packets received at the stream receiver to the known arrangement of data packets.
3. The method of claim 1, the method further comprising:
storing the data packets received at the stream receiver into an original data buffer and a rendered data buffer; and
recreating the data packets from the stream sender at an original data buffer by integrating the missing known data packets from the retransmission into the data packets stored at the original data buffer.
4. The method of claim 3, wherein recreating the data packets from the stream sender at an original data buffer includes at least one of the following:
 - (1) reordering out of sequence data packets
 - (2) discarding duplicate data packets
 - (3) synchronizing audio and video data packets.
5. The method of claim 1, the method further comprising:
comparing at a device recreated data packets at the original data buffer to the data packets stored at the rendered data buffer to form the perceived quality of streaming data score; and

sending at the device the perceived quality of streaming data score to an analyzer and a third party for evaluation purposes.

6. The method of claim 5, wherein the rendered data buffer delays transmitting the stored data packets to the device until the missing known data packets are integrated into the data packets stored at the original data buffer.

7. The method of claim 5, wherein the third party evaluates the perceived quality of streaming data score to track the Service Level Agreements at the stream receiver.

8. The method of claim 5, wherein the analyzer evaluates the perceived quality of streaming data score to allocate sufficient bandwidth to provide acceptable quality of service to the stream receiver.

9. A system comprising:

a stream receiver;

a stream sender configured to transmit a data stream of data packets having a known arrangement to the stream receiver via a network connection;

the stream receiver configured to analyze the transmitted data packets received from the stream sender to determine whether any missing known data packets in the known data packet arrangement were not transmitted by the network connection to the stream receiver;

a retransmit protocol configured to allow the stream receiver to request the stream sender to retransmit any missing known data packets not received at the stream receiver and the stream sender to retransmit any missing known data packets to the stream receiver; and

a device configured to form a perceptual quality measurement score, wherein the device transmits the perceptual quality measurement score to an analyzer and a third party evaluator.

10. The system of claim 9, wherein the stream receiver is configured to analyze by comparing the received data packets with the known arrangement of data packets.

11. The system of claim 9, further comprising:

an original data buffer configured to store the data packets received at the stream receiver and recreate the data packets transmitted from the stream sender, wherein the

original data buffer integrates the missing known data packets into the data packets stored into the original data buffer; and

a rendered data buffer configured to store the data packets received at the stream receiver, wherein the rendered data buffer delays transmitting the data packets to the device until the known missing data packets are integrated into the data packets received at the original data buffer.

12. The system of claim 11, wherein the original data buffer is configured to recreate the data packets transmitted from the stream sender, using a recreation process that includes at least one of the following:

- (1) reordering out of sequence data packets
- (2) discarding duplicate data packets
- (3) synchronizing audio and video data packets.

13. The system of claim 9, wherein the analyzer is configured to analyze the perceptual quality measurement score to allocate sufficient bandwidth to provide acceptable quality of service to the stream receiver.

14. The system of claim 9, wherein the third party evaluator is configured to analyze the perceptual quality measurement score to track meeting Service Level Agreements at the stream receiver.

15. The system of claim 9, the system further comprising
a plurality of stream sender locations;
a plurality of stream receiver locations; and
a plurality of third party evaluators,
wherein the plurality of stream sender locations and the plurality of stream receiver locations are configured to form the perceptual quality measurement score.

16. The system of claim 15, wherein the plurality of stream sender locations and the plurality of stream receiver locations are configured for multicasting.

17. The system of claim 15, wherein the plurality of stream sender locations and stream receiver locations are configured for conversation with any number of stream sender locations and stream receiver locations.

18. A computer readable medium encoded with a program, which when executed, causes:

transmitting a data stream of data packets having a known arrangement from a stream sender to a stream receiver via a network connection;

analyzing the transmitted data packets received at the stream receiver to determine whether any missing known data packets in the known data packet arrangement were not transmitted by the network connection to the stream receiver;

requesting the stream sender to retransmit any missing known data packets not received at the stream receiver; and

retransmitting any missing known data packets from the stream sender to the stream receiver.

19. The medium of claim 18, wherein the analyzing procedure is performed by comparing the data packets received at the stream receiver to the known arrangement of data packets.

20. The medium of claim 18, the program code, when executed, further causes:

storing the data packets received at the stream receiver into an original data buffer and a rendered data buffer; and

recreating the data packets from the stream sender at an original data buffer by integrating the missing known data packets from the retransmission into the data packets stored at the original data buffer.

21. The medium of claim 20, wherein recreating the data packets from the stream sender at an original data buffer includes at least one of the following:

- (1) reordering out of sequence data packets
- (2) discarding duplicate data packets
- (3) synchronizing audio and video data packets.

22. The medium of claim 18, wherein the program code, when executed further causes:

comparing at a device recreated data packets at the original data buffer to the data packets stored at the rendered data buffer to form the perceived quality of streaming data score; and

sending at the device the perceived quality of streaming data score to an analyzer and a third party for evaluation purposes.

23. The medium of claim 22, wherein the rendered data buffer delays the stored data packets until the missing known data packets are integrated into the data packets stored at the original data buffer.

24. The medium of claim 22, wherein the third party evaluates the perceived quality of streaming data score to track the Service Level Agreements at the stream receiver.

25. The medium of claim 22, wherein the analyzer evaluates the perceived quality of streaming data score to allocate sufficient bandwidth to provide acceptable quality of service at the stream receiver.